**Statement of the**

**AMERICAN PUBLIC POWER ASSOCIATION,**

**LARGE PUBLIC POWER COUNCIL,**

**AND**

**TRANSMISSION ACCESS POLICY STUDY GROUP**

**Submitted to the**

**HOUSE WAYS AND MEANS COMMITTEE**

**TAX REFORM WORKING GROUPS**

**on**

**CHARITABLE/EXEMPT ORGANIZATIONS;**

**DEBT, EQUITY AND CAPITAL;**

**ENERGY;**

**AND**

**FINANCIAL SERVICES**

(Submitted April 15, 2013)

## Introduction

The American Public Power Association (APPA)[1], Large Public Power Council (LPPC)[2], and Transmission Access Policy Study Group (TAPS)[3] appreciate the opportunity to submit this statement in relation to the House Ways and Means Committee's Tax Reform Working Groups on Charitable/Exempt Organizations; Debt, Equity and Capital; Energy; and Financial Services. Public power utilities serve some of the nation's smallest towns—roughly four out of five public power utilities serve 10,000 or fewer customers—and largest cities, including Los Angeles and Orlando. Collectively, public power utilities deliver electricity to one of every seven U.S. electricity consumers (approximately 47 million people).

Fundamental income tax reform could have a direct effect on a number of issues of concern to our members, including the treatment of health care expenses and of pension and retirement contributions and accruals. However, given the potential damage that could be done to our members' ability to continue their mission to provide affordable and reliable electricity to their customers, this statement will focus primarily on the effect of tax reform on financing of capital expenditures.

As the House Ways and Means Committee debates tax reform, it should consider carefully the effect on state and local governmental entities', including public power utilities', ability to finance the critical infrastructure investments needed to provide for economic growth and our citizens' well-being. Changes to the current law treatment of tax-exempt bonds will increase the price that public power customers pay for electricity, especially affecting small businesses and low- and fixed-income households, and reduce the ability to fund necessary public power infrastructure improvements.

## Municipal Bonds

Municipal bonds have been used for more than 200 years[4] by state and local governments to finance a wide range of public infrastructure. They allow state and local governments to build projects with capital provided upfront by bond investors, repaid over the projects' useful life by the citizens and customers benefitting from the project.

Municipal bonds are the largest source of financing for core infrastructure in the U.S.,[5] and are the single most important financing tool for public power, given the capital-intensive and long-lived nature of assets needed by the electric industry. Each year, on average, public power utilities make $15 billion in new investments financed with municipal bonds. Over the last 10 years, power-related projects have totaled $147 billion, roughly 9% of all municipal bond issuances.[6]

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[1] APPA is the national service organization representing the interests of over 2,000 municipal and other state- and locally-owned, not-for-profit electric utilities ("public power utilities") throughout the United States (all but Hawaii). All LPPC and all, but two, TAPS members are members of APPA.

[2] LPPC is the national service organization comprised of 26 of the nation's largest public power utilities. LPPC member utilities own and operate more than 86,000 megawatts of generation capacity and over 35,000 circuit miles of high voltage transmission lines. Together, LPPC members control 90% of the public-agency-owned, but non-federal, transmission investment in the nation.

[3] TAPS is an association of transmission-dependent utilities in more than 30 states, promoting open and non-discriminatory transmission access.

[4] The exclusion for municipal bond interest from the federal income tax was first codified in the Revenue Act of 1913, but state and local governments had been issuing bonds to finance infrastructure long before then. For example, the City of New York issued the first general obligation bond to financing the building of a canal in 1812.

[5] Cong. Budget Office, J. Comm. on Taxation "Subsidizing Infrastructure Investment with Tax-Preferred Bonds" (Oct. 2009)(showing that for education, water, and sewer, nearly all capital investments are made by state and local governments and that for transportation most investments are made by state and local governments).

[6] The Bond Buyer & Thomson Reuters "2012 Yearbook" (2012); The Bond Buyer & Thomson Reuters "2007 Yearbook" (2007).

Public power utilities use municipal bonds to finance investments in power generation (including through renewable and alternative fuels), transmission, distribution, reliability, demand control, efficiency, and emissions controls. While the typical power-related bond issue is relatively small, electric generation and transmission projects often cost hundreds of millions or even billions of dollars and can have as long as a 50-year operational life.

Further, changes in the electric sector—many in response to federal and state energy policies—are expected to require significant additional capital investment in the near term. Replacing retiring older generation, meeting increasing cyber security needs, integrating new renewable resources, and modernizing the electric grid to meet changing demands will all require new infrastructure investment to assure reliable electric service into the future.

Examples of projects financed with municipal bonds demonstrate their broad use in building and upgrading electric infrastructure, allowing cost-effective investments to meet growing demands and government mandates. Altering the current income tax exclusion for municipal bond interest, for example by imposing a surtax on bond interest to create a "28% cap," would increase the cost of such projects*, in turn driving up utility rates for customers.

- Transmission: $230 million in bonds to finance transmission lines and system improvements in Georgia ($53 million in additional costs).
- Distribution: Over $53 million in bond proceeds were used to upgrade and improve electric distribution system in Washington State ($12 million in additional costs).
- Generation: $800 million in bonds were utilized to construct a state of the art coal facility in Arizona; $500 million in municipal bonds were used to construct a combined cycle natural gas plant in Texas ($184 million and $115 million, respectively, in additional costs).
- Environmental Upgrades: $200 million in tax exempt bonds were used to install scrubbers on a coal fired generation facility in Texas; $750 million to modify ocean water cooling on a natural gas facility in California ($46 million and $173 million, respectively, in additional costs).

* (Cost estimates assume a 77 basis point increase in all-inclusive borrowing costs over a 30-year term.)

Because interest on municipal bonds is exempt from federal income tax, investors accept a lower rate of return than they would otherwise demand from issuers of taxable debt. Investors are also attracted to municipal bonds because of the stability of the municipal bond market and the extremely low rate of default for municipal bonds. Historically, interest rates demanded by investors for tax-exempt municipal bonds have been an estimated average 200 basis points lower than comparable taxable corporate bonds. Savings to the issuer from this reduced cost in borrowing allow further infrastructure investments or are passed through to taxpayers in the form of lower taxes or, in the case of public power customers, reduced utility rates[7].

An added advantage of municipal bonds as a source of state and local financing is that the need for,

[7] American Public Power Association "2012-2013 Public Power Annual Directory and Statistical Report" 51 (2012).

and terms of, financing are determined by state and local citizens, either directly or through their representatives. Additionally, significant flexibility is afforded to state and local government issuers compared to issuers of taxable debt, including the term of the issue, the debt structure, and the ability to optionally call fixed rate debt after 10 years to take advantage of any decreases in interest rates by refinancing the debt.

**Current Financing Alternatives**

Several alternative debt instruments exist that supplement tax-exempt municipal bonds as a means of financing state and local infrastructure investments. However, as explained below, each has its own substantial inefficiencies and none, alone, would be a viable replacement for municipal bonds.

Taxable Bonds

On occasion, state and local governments issue taxable debt to finance infrastructure investments, generally as a supplement to financing provided by tax-exempt debt. Taxable bonds appeal to a different type of investor, typically those less concerned with tax considerations (such as pension funds and foreign investors) and so can expand the potential pool of investors for a larger project. Because investors generally demand a higher rate of return on taxable bonds than on tax-exempt municipal bonds, their use is limited and could not replace tax-exempt municipal bonds as a means of financing.

Other practical considerations also limit the use of taxable bonds by municipal issuers. As more fully described herein, more than 47,000 state and local governments issue debt in this market. By comparison, roughly 5,000 corporations issue debt in the taxable market. While the taxable market generally only accommodates large financings, the existing tax-exempt market accommodates issues that vary significantly in size and rating. From 2002 to 2011, the median municipal issuance was $7 million. In addition, issuers are subject to more restrictions on the terms of debt issued in the taxable market. For example, while the right to optionally call a bond prior to final maturity at par is a component of most fixed-rate tax-exempt municipal bonds, such provisions are rare (and costly to include) in taxable bonds. As a result, state and local government issuers are generally effectively precluded from refinancing taxable debt to take advantage of an interest rate decrease.

Direct Payment Bonds

Direct payment bonds are bonds, the interest on which is taxable to the bond holder, but for which state and local government issuers receive a direct federal payment generally set at a percentage of the interest rate paid to bond holders. Build America Bonds (BABs) were able to be issued as direct payment bonds from February 17, 2009, through December 31, 2010. The reimbursement rate for these bonds was set at 35 percent. Of the $843 billion in municipal bonds issued in 2009 and 2010, roughly $181 billion were direct payments BABs. This unprecedented willingness of municipal issuers to issue taxable debt stemmed, in large part, from the reimbursement rate. In addition, given the turmoil in all capital markets during the banking crises, expanding the pool of investors through the issuance of taxable debt assisted issuers by providing greater market liquidity. The President's FY 2014 Budget Proposal included the America Fast Forward (AFF) Bond program, that is similar to BABs but with a lower subsidy rate.

The Clean Renewable Energy Bond (CREB) program was intended to provide for state and local governments (and rural electric cooperatives) the same incentives to invest in renewable projects as was provided by the production tax credit. The original program was a tax credit bond program, but after very limited success, in a new version of the CREB program, New CREBs, was created in 2008 and modified

in 2010 to allow issuers the option of receiving a direct payment from Treasury in lieu of providing bond holders a tax credit.

Although direct pay bonds appear to be an efficient means of providing a federal subsidy to issuers of state and local bonds, these bonds have their own inefficiencies that raises their cost or makes them less desirable to issuers and investors. First, many issuers have concerns about offsetting payments by amounts potentially owed to the federal government under other programs. Second, sequestration of direct payment bond payments[8] has confirmed concerns that the federal government could change the amount of the subsidy after issuers borrowed in reliance on the expectation of direct subsidy payments.

Tax Credit Bonds

Tax credit bonds are taxable obligations in which the investor receives a tax credit in lieu of tax- exempt interest. BABs, CREBs, and Qualified Energy Conservation Bonds can be issued as tax credit bonds. They are sophisticated debt instruments that have traditionally been purchased by investment banks for their own account.

The tax credit rate is set daily by the Treasury Department based on the average "AA" corporate rated debt. This "one-size-fits-all" coupon approach has led to either discounting of the bond upon issuance or a requirement that issuers pay a "supplemental coupon" to increase the yield on the bonds in order to attract investors, reducing the efficiency of this financing mechanism.

In 2008, tax credit bonds were modified to allow investors to separate (or "strip") the tax credits from the bond and sell them separately. However, because the logistics of stripping is complex, investors discount the value of both the credits and the remaining bond. Investors further discount the value of tax credit bonds to reflect additional costs and risks, including the risk that the investor may not have a federal tax liability in later years against which to use the credits.

Because of these difficulties, the demand for tax credit bonds has been limited and issuers have been reluctant to rely on them.[9]

Private Activity Bonds

Private activity bonds issued by state and local governments for certain permitted facilities are exempt from federal gross income tax, but generally subject to the alternative minimum tax. Such facilities include airports, docks and wharfs, multi-family housing, single family housing, student loans and solid waste disposal facilities

Unlike governmental bonds, these qualified private activity bonds are subject to a wide range of restrictions and limitations including limits on the amount of bond proceeds which may be applied to finance costs of issuance, limits on state bond volume, rules regarding public notice of the bond issue and the purpose to be financed, and limits on the maturity of the bonds. Additional restrictions mean private activity bonds are seldom issued by government-owned utilities to finance energy infrastructure improvements such as generation, transmission and distribution assets.

[8] Office of Mgmt. & Budget, Exec. Office of the President, OMB Report to the Congress on the Joint Committee Sequestration for Fiscal Year 2013 48 (Mar. 1, 2013).

[9] IRS SOI, "Table 11. Total Tax Exempt, Taxable, Direct Payment, and Tax Credit Bonds, 2010," http://www.irs.gov/file_source/pub/irs-soi/10bd11arra.xls (last visited Mar. 29, 2013) (Of 29,315 municipal bonds totaling $556.9 billion in volume reported to the IRS in 2010, just 199 totaling $1 billion in volume were tax credit bonds.).

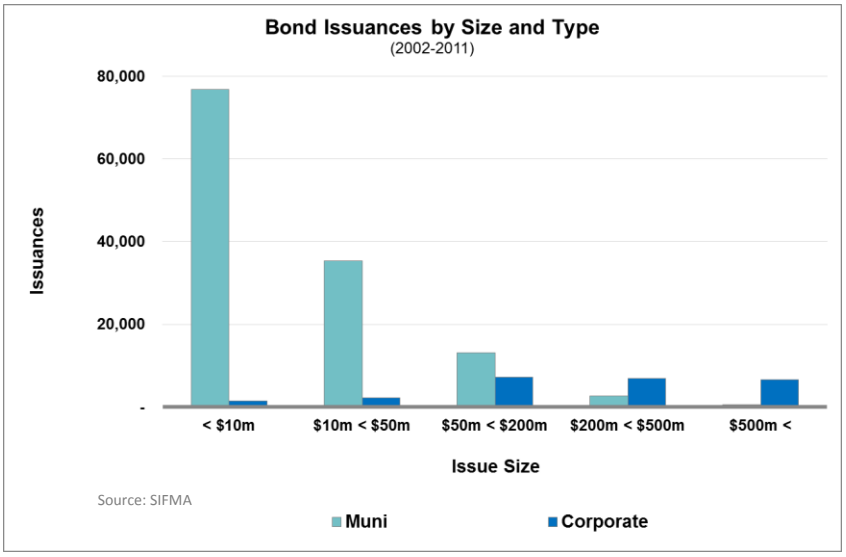
**Municipal Bond Market**

While the use of municipal bonds in America predates the birth of our nation, the first recorded general obligation municipal bond was not issued until 1812. Since then, the municipal bond market has been a steady source of financing for state and local governments. Today, there are nearly $3.7 trillion municipal bonds outstanding, with approximately $400 billion in issuances every year.

The policy of "reciprocal immunity"—that the federal government does not tax interest on state and local borrowing and state and local governments do not tax federal borrowing—and the longevity of this exemption have given municipal bond investors and issuers great confidence in its permanency and allowed the market to function efficiently.[10] While subsequent changes to the tax code have placed additional requirements and restrictions on the issuance of municipal bonds, interest on government-purpose bonds has always been exempt from federal income tax.

This stability has allowed the market to accommodate a vast number of issuers. More than 47,000 state and local governments issue debt in this market. By comparison, only roughly 5,000 corporations issue debt in the taxable market. The market also accommodates issues that vary significantly in size and rating. From 2002 to 2011, the median municipal issuance was $7 million.

Also, our members serve some of the nation's smallest towns—roughly four out of five public power utilities serve 10,000 or fewer customers—and all but 43 meet the Small Business Administration standard for a small business.[11] These small utilities provide power to nearly 10 million residences, 1.7 million businesses, and 112,000 industrial customers. All told, nearly 26 million Americans receive their power from these small businesses.




[10] Conversely, the threat that Congress might alter this tax treatment caused demonstrable harm to the municipal bond market in 2012, both in terms of higher rates for new borrowings and in the loss of value of tax-exempt holdings in the secondary market (*see*, Janney Capital Markets, "Municipal Bond Market Note: The Threat to Tax Exemption" 3 (Oct. 19, 2012)).

[11] 12 CFR Part 121.201 *n.* 1 (referencing 4 million megawatt hours of sales or generation as the size standard for utilities in the North American Industry Classification System's Electric Power Generation, Transmission and Distribution industry group).

Investors purchase municipal bonds, in part, because of tax considerations, accepting a lower rate of return because the interest is exempt from federal income tax. But municipal bonds are also valued for their stability, the low rate of risk of default, and their ability to generate a steady stream of revenue for fixed-income households. In 2010, nearly 60 percent of bond interest paid to individuals was reported on returns for households aged 65 and older.

Also, while municipal bonds are perceived by some as an investment of only the rich, 52 percent of all bond interest paid to individuals went to households with income of less than $250,000;[12] roughly 75 percent went to households with income of less than $1 million.[13] IRS data also show that for those who own municipal bonds, the amount of interest earned actually declines as a percentage of overall income as income increases. In other words, for households holding municipal bonds, the interest paid is more important as a source of income as household income decreases.

**Market and Regulatory Safeguards**

There is a longstanding and comprehensive federal legislative and regulatory system in place to regulate the tax-exempt bond market. Both the IRS and SEC have active enforcement programs for state and local bonds to help ensure that the applicable rules are satisfied. Federal tax laws significantly limit: the entities that can issue tax-exempt bonds; the purposes for which the bonds may be issued; and the investment of bond proceeds. These rules are particularly restrictive for public power utilities. For example, in the case of public power bond issuances, regardless of the size of the borrowing, no more than $15 million (or 10% of the total bond proceeds, if less than $15 million) can be used for private use. In addition, unlike the rules applicable to other types of governmental bonds, the private use rules also expressly limit the private use applicable to any "output project" to no more than $15 million. Furthermore, the IRS private use rules effectively prevent issuers from using tax-exempt bonds to build larger facilities than are required to meet the needs of their communities or to issue bonds with longer terms than needed.

The SEC and Municipal Securities Rulemaking Board regulate the manner in which state and local governments may sell their bonds and provide rules on the types of disclosure required in connection with the sale of municipal bonds, as well as ongoing annual and material event disclosure.

Significant market-based safeguards also prevent state and local issuers from irresponsibly issuing bonds or using bond financing for ill-advised projects.

**Alternatives to the Current-Law Exclusion for Municipal Bond Interest**

As Congress considers proposals to reform the federal income tax, it should bear in mind the unique origin of the exclusion for municipal bond interest and the substantial damage that would be done by any of the alternatives currently being advanced. Such proposals would not only affect current bondholders, but would force tax and rate increases on state and local residents to accommodate higher borrowing costs and reduce the amount spent on needed infrastructure by state and local governments.[14]

[12] Internal Revenue Service, "Statistics of Income—2010: Individual Income Tax Returns" (2012).
[13] *Ibid.*
[14] Testimony at this hearing indicated that there is consensus among economists that repealing the exclusion would reduce borrowing costs, but cited a single study on the effect of the exclusion for state and local sales taxes and not the exclusion for municipal bond interest (Scott Hodge, Tax Foundation "Testimony on Tax Reform and Tax Provisions Affecting State and Local Governments before the House Committee on Ways and Means" n.1 (Mar. 19, 2013)).

Some critics say the exclusion for municipal bond interest is inefficient. These arguments come from several sources, including the Joint Committee on Taxation (JCT). However, research over the last decade has called into questioned JCT's conclusions[15] and its methodologies.[16] On the whole, these analyses indicate that inefficiency and revenue lost from the exclusion are dramatically overstated. Even critics of the exclusions agree that at least 80% of the benefit of the exclusion goes to reduce state and local borrowing costs and not as a windfall to investors.[17]

More importantly, there is virtually no disagreement as to who will pay the price if Congress were to upend the 100-year precedent of exclusion to tax municipal bond interest with, for example, a surtax on municipal bond interest.[18] It will not be borne by the bond investor, who will be compensated with a higher interest rate to compensate for any federal surtax. Rather, state and local residents will be forced to pay billions more every year in additional financing costs.

As noted above, throwing more than 47,000 state and local issuers into the taxable bond market would be unprecedented, incredibly disruptive, and costly. Each of the proposed alternatives to tax-exempt bonds comes with its own inefficiencies from the perspective of issuers of these bonds. In contrast, the current municipal bond market provides issuers ready access to capital with maximum flexibility. This market charges a premium to issuers who have undertaken unwise projects or borrowed beyond their constituents' willingness (or ability) to repay these bonds. As a result, it should come as no surprise that municipal bonds are second only to Treasury bonds in their stability.[19]

Repeal

An outright repeal of the exclusion for municipal bond interest would both undermine a century of tax-policy precedent and devastate the ability of state and local governments of all sizes to seek financing in an effective, well-regulated, well-understood, and stable market.[20] Estimates of the increased cost to issue taxable debt vary and generally are based on the historic spread between corporate taxable debt and municipal tax-exempt debt that, on average, has been nearly 200 basis points. Recent analysis of the cost of issuing taxable debt in the current market (with its historically low interest rates) showed a nearly 150 basis point increase for a larger municipal issuer and a 166 basis point increase for a smaller issuer.[21] At

[15] Francis Longstaff , "Municipal Debt and Marginal Tax Rates: Is There a Premium in Asset Prices?" *NBER Working Paper 14687* 21-22 (Jan. 2009); Andrew Ang, Vineer Bhansali, & Yuhang Xing, "Taxes on Tax-Exempt Bonds" *Journal of Finance*, pp 565-601 (Nov. 11, 2008).

[16] James M. Poterba & Arturo Ramirez Verdugo, "Portfolio Substitution and the Revenue Cost of Exempting State and Local Government Interest Payments from Federal Income Tax" *NBER Working Paper 14439* (Oct. 2008); George Friedlander, Citi, "The Tax Exemption of Municipal Bonds: A Much More Efficient Financing Mechanism Than Government Analyses Suggest" (Jan. 17, 2013).

[17] Frank Sammartino, Congressional Budget Office, Testimony before the U.S. Senate Finance Committee Hearing on "Federal Support for State and Local Governments through the Tax Code" (Apr. 25, 2012).

[18] BLX Group LLC, "Tax Reform Proposal Analysis: Impact on Tax-Exempt Bond Financing," prepared for American Public Power Association 6 (Jan. 28, 2013) (estimating a 77 basis point increase in all-inclusive borrowing costs for large issuers and a 92 basis point increase in all-inclusive borrowing cost for smaller issuers); George Friedlander, Citi "Muni Issuers and the Current Market Environment: Threats, Challenges and Opportunities" 10 (Mar. 30, 2012)(estimating a yield increase of as much as 75 basis points); and John Hallacy & Tian Xia, Bank of America Merrill Lynch, "Munis & Derivatives Data" 1 (Feb. 13, 2012)(estimating a 40 basis point increase on issuer costs).

[19] See, for example, Moody's "U.S. Municipal Bond Defaults and Recoveries: 1970-2011" (Mar. 7, 2011)(showing that of a sample of 17,700 rated issuers, just 71 had defaulted over the 42-year period and, of those, just two were public power issuers).

[20] This statement is primarily concerned with the tax policy considerations of tax reform, but a number of academics have questioned whether federal tax on state and local financing would violate constitutional intent and whether the courts would uphold such a tax.

[21] BLX, *supra* note 18 (Appendix A of this statement is a summary of the report's findings; Appendix B is the report itself).

the historic spread, if proposals to eliminate tax-exempt financing had been in place over the last 10 years, it would have cost state and local governments $495 billion in additional interest expense.

The actual costs would likely be far greater, as roughly 50,000 states and local issuers—60 percent of whom are borrowing less than $10 million—would be forced into a taxable market where the median issue for roughly 5,000 corporate issuers is closer to $200 million. Likewise, flexibility unique to municipal bonds—such as the ability to match bond maturities to match revenues and project life and to optionally call bonds prior to final maturity to take advantage of changes in interest rates—would be lost or would come at a significant premium in the taxable market.

28% "Cap"

A "cap" on the tax value of the exemption for municipal bond interest is, in principle and in effect, a surtax on municipal bond interest. For example, to "cap" the tax value of municipal bond interest at 28%, a tax of up to 11.6% (given the current top marginal income tax rate of 39.6%) would be imposed on municipal bond interest. This "cap" was proposed in President Obama's FY 2014 Budget. While theoretically targeted at upper-income investors, the reality is that such a tax would hurt the issuers of new tax-exempt bonds and the secondary market value of holdings for all outstanding bond-holders.[22]

As a result, all potential investors would demand an interest rate premium on new issuances, either as compensation for the loss of net earnings or to offset the downward pressure on secondary market value caused by the new tax. An additional risk premium would be demanded by the market to compensate for possible future federal tax rate increases, as well as for future downward reductions in the cap rate. Recent analysis shows that a 28% "cap" would increase financing costs for a larger issuer by 77 basis points, while a smaller issuer's costs would increase by 92 basis points.

| **Individual Ownership of Municipal Bonds** | | |
|---|---|---|
| **Income Group**[23] | **Exempt Interest Earned**[24] | |
| | Amount | % of Total |
| Under $250,000 | $39.4 billion | 52% |
| $250,000 to $999,999 | 17.8 billion | 24% |
| $1 million and Above | 17.9 billion | 24% |
| **Total** | **$75.2 billion** | **100%** |

In addition to increasing the cost of borrowing for state and local government issuers, the notion that the bonds are a "hybrid investment" - that is, depending on the tax status of the purchaser either all or some of the interest will be excluded from federal gross income - adds complexity to all debt issuances, requires more lengthy and comprehensive disclosure and increases borrowing and transaction costs.

[22] ETF Trends "Muni Bond ETFs Tumble on Tax-Break Speculation" (Dec. 14, 2013) (http://finance.yahoo.com/news/muni-bond-etfs-tumble-tax-181300222.html)(last visited Mar. 28, 2013).

[23] "Income Group" includes filers of all marital statuses. However, IRS data indicates that 65% of all exempt interest is paid to those filing as married-filing-jointly (see, *Id.* at 42); IRS data also indicates that roughly 48% of exempt interest is paid to those with income of less than $200,000.

[24] "Exempt Interest Earned" is equal to the amount of tax-exempt interest claimed on individual income tax returns in 2010; also, as much as 80% of municipal bond interest was paid to individuals either directly or through funds (*Board of Governors of the Federal Reserve,* "Flow of Funds Accounts of the United States" 99 (Dec. 6, 2012)).

Flat-Dollar Cap

A flat-dollar cap on the amount of deductions and exclusions a taxpayer could claim would essentially amount to a repeal of the current exclusion for municipal bond interest. Under this proposal, taxpayers would be given the option to exclude from income some or all of such interest if other deductions and exclusions are not used to "fill" the cap. It is generally assumed that taxpayers would first fill the cap with non-optional expenses – such as employer-provided health care, retirement investments, education, child and dependent care, and home mortgage interest. As a result, at the dollar levels being discussed, a flat-dollar cap would result in the full taxation of municipal bond interest for most if not all municipal bond holders. The cost in the secondary market to bond holders and to issuers for new issuances would likely be on par with that of a full repeal.

Replacing Municipal Bonds with Tax Credit Bonds

Generally, the tax credit bond market is an illiquid, small market that could not replace the current municipal bond market. The tax credit bond market cannot absorb the average annual debt issuance of tax-exempt bonds, which over the last 10 years has averaged approximately $380 billion per year.

Purchasers of taxable bonds include entities that pay no federal income tax, such as public pension funds, private pension funds and foreign investors. To attract such investors, the tax credits would need to be stripped and sold to entities that pay federal income taxes. In addition to discounting the amounts paid for credits due to the complexity of stripping and selling a stream of tax credits, purchasers will discount the credits to offset the following: (i) transaction costs; (ii) tax risk associated with concerns that the credits might stop in the event the bonds do not meet the federal bond tax rules; (iii) risk that the investor may not have a federal tax liability in later years to fully utilize the credits; and (iv) default risk and related factors.

Replacing Municipal Bonds with Taxable Direct Payment Bonds

All the concerns regarding cost, access to capital, and flexibility for issuers caused by an outright repeal of the exclusion for municipal bond interest would also apply to a replacement of the exclusion with a taxable direct payment bond. Further, the small issuers that dominate the tax-exempt bond market would be disproportionately affected by having to borrow in the taxable market. A recent analysis shows that replacing municipal bonds with a 25 percent direct payment bond would still result in a net cost increase to a large issuer of 51 basis points and to a smaller issuer of 58 basis points.[25] Further, there is a legitimate question among our members as to whether these direct payment bonds have been forever tarnished by the impact of sequestration. This sequestration cut was not envisioned by the drafters of BABs; it therefore calls into question whether or not more cuts will be forthcoming at some point in the future.

**Improvements to Municipal Bonds**

While much of Congress's recent discussion of municipal bonds has focused on how much revenue could be raised by taxing them, this Committee has begun discussing how to improve the rules surrounding municipal bonds. A thoughtful discussion of ways to modernize the tax code would be welcome.

[25] BLX, *supra* note 18, at 6.

We endorse the National Governors Association's all-of-the above approach to municipal finance. For example, while direct payments bonds could not replace municipal bonds, in the case of New CREBs and BABs they have served as a helpful supplement to traditional municipal bond financing.

Taxable direct-payment BABs also provided a welcome expansion of potential investors in 2009 and 2010—a time when the appetite for municipal bonds was limited. However, the recent experience with the cutting of payments to BABs issuers under sequestration has substantially dampened enthusiasm for BABs in the issuer community. At the very least, as a result of sequestration, the cost of issuing such bonds going forward would likely be higher as issuers demanded provisions to provide an early optional call bonds (in the case of another sequestration or similar cut to federal payments to the BABs issuer). Nevertheless, a taxable direct payment BAB could still make a welcome supplement to traditional municipal bonds. Reimbursement rates for a proposal reinstating BABs are much lower than the 35% provided under the original BABs program. Still, if Congress were to demonstrate its commitment to the program going forward, a taxable direct payment bond could be a useful supplement to traditional municipal bonds, and could reduce state and local borrowing costs overall.

Similarly, problems with New CREBs have been the limited amount of bond volume available; the laborious process for seeking approval to issue these bonds; and the "locking out" of projects by projects for which allocations have been approved, but which have not begun. Congress has also failed to continue its investment in the policy—extending the production tax credit while failing to increase the allocation for New CREBs. A more consistent treatment could increase their efficacy.

Policymakers should also reconsider current laws which limit public power utilities' flexibility to finance infrastructure investments including rules:

- Providing that no more than 10 percent of the output of an electric facility may be used for private use;[26]

- Providing that only up to $15 million per project of private use for power-related projects;[27] and

- Severely limiting the ability of municipal utilities to acquire existing privately-owned, power-related assets with government-purpose bonds.[28]

A related issue is the taxation of capital contributions by public power utilities to investor-owned utilities (IOUs) to build facilities (e.g., interconnections and associated facilities, transformers, circuits, etc.) to serve the public power utility's retail demand ("load") are treated as taxable "contributions-in-aid of construction" to the IOU.[29] Because the IOU traditionally requires the municipal utility to "gross up" its contribution, the cost of the investment is effectively increased by as much as 35 percent.

These limitations severely limit the ability of municipal utilities to work cooperatively with investor-owned utilities to finance energy infrastructure improvements such as generation, transmission and distribution assets. Re-examining these restrictions could increase public-private partnerships in critical infrastructure investments.

[26] 26 USC 141(b)(2).
[27] 26 USC 141(b)(4).
[28] 26 USC 141(d).
[29] 26 USC 118(b).

**APPENDIX B**

## Tax Reform Proposal Analysis:

## Impact on Tax-Exempt Bond Financing Summary Tables[30]

| Bond Financing Models (Assumes "A" Rated)<br>Large Borrower ($250 Million Project) | | | |
|---|---|---|---|
| **Type of Issue** | **All-Inclusive Cost** (annual rate) | **Current Law Municipal Bond vs. Alternative** | |
| | | Percentage Point Difference in All-Inclusive Cost | Percent Increase in All-Inclusive Cost |
| **Current Law Municipal Bond** | 3.19% | Not Applicable | Not Applicable |
| **Alternatives** | | | |
| **Municipal Bond with Surtax/28% "Cap"** | 3.95% | +0.77 | +24% |
| **Taxable Direct Payment Bond (25%)** | 3.69% | +0.51 | +16% |
| **Taxable Bond** | 4.69% | +1.50 | +47% |

| Bond Financing Models (Assumes "A" Rated)<br>Small Borrower ($25 Million Project) | | | |
|---|---|---|---|
| **Type of Issue** | **All-Inclusive Cost** (annual rate) | **Current Law Municipal Bond vs. Alternative** | |
| | | Percentage Point Difference in All-Inclusive Cost | Percent Increase in All-Inclusive Cost |
| **Current Law Municipal Bond** | 3.39% | Not Applicable | Not Applicable |
| **Alternatives** | | | |
| **Municipal Bond with Surtax/28% "Cap"** | 4.31% | +0.92 | +27% |
| **Taxable Direct Payment Bond (25%)** | 3.97% | +0.58 | +17% |
| **Taxable Bond** | 5.05% | +1.66 | +49% |

[30] BLX, *supra* note 16, at 6.

**APPENDIX B**

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BLX
ADVISORS • ASSET MANAGEMENT • COMPLIANCE

# Tax Reform Proposal Analysis

## Impact on Tax-Exempt Bond Financing

Prepared for
American Public Power Association

APPA American Public Power Association
PublicPower.org

January 28, 2013

www.bixgroup.com

**APPENDIX B**



American Public Power Association
PublicPower.org

## Tax Reform Proposal Analysis

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**Introduction:**

Policymakers are considering a number of alternatives to the current federal tax regime for municipal bonds. The analyses contained in this report provide a perspective on the effect such proposals would have on municipal bond financing costs, showing that bonds issued under each alternative would face higher costs than if issued under traditional tax-exempt financing. These analyses rely on existing market data and existing income tax rates (both as of October 22, 2012), rather than on projections on what the market and tax rates might look like at some future date. Because the model relies on existing market data, it provides a robust "snapshot" of how these alternatives would perform in today's market.

**Market Overview:**

In reviewing the scenarios put forth in this analysis, it is worthwhile to place the current interest rate environment and tax-exempt bond market in perspective. Interest rates are at historical lows, and the scenarios and assumptions today may look materially different in a future interest rate environment and economic cycle. Stated simply, in a more typical, high interest rate environment, the impact of the proposals to restrict or eliminate tax-exempt financing described in this report would be greater.

The "flight to quality" during the last four years in treasury securities has distorted the historical relationships of treasury bonds, corporate bonds and tax-exempt municipal bonds. The interest rate spread differential between tax-exempt bonds and their taxable counterparts has become compressed. Historically, municipals have traded at about 90% of U.S. treasuries. For extended periods over the last four years, municipal bond yields have exceeded those of treasuries (100%+). Credit quality spreads have also compressed in the current low yield environment, as investors have "reached" for the added yield of lower quality bonds. Many market analysts believe these tight spread relationships are unsustainable and will change at some point.

A variety of factors have impacted the credit markets and dampened the spread differences and associated borrowing costs between taxable and tax-exempt debt. The economic crisis and credit concerns about wide ranging municipal defaults are some of the factors that have led to these nontraditional spread relationships. The Federal Reserve's stated objective to hold short term rates at "exceptionally low rates" until mid-2015 and their execution of quantitative easing, including the current "QE3" program to put downward pressure on long term rates, have also exacerbated these distorted spread relationships.

If the market returns to "normal" without changes to tax policy, then traditional trading relationships should reappear. In this context, "normal" would mean that municipal bonds trade closer to 90% of U.S. treasuries. In such a market, the interest cost of the alternatives to tax-exempt bonds that are considered in this report would also increase relative to the cost of traditional municipal bonds. Note, that supply and demand in the municipal market will also impact these spread relationships on a daily basis, and tax policy changes will have a direct influence on these components that help drive borrowing costs for issuers.

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**Assumptions for Comparative Analysis:**

For purposes of the comparisons, we have used typical municipal structures used in the market, including:

1. "A" credit rating
2. Serial bonds to 20 years and term bond in 30 years
3. Level debt service
4. Large borrower - $250+ million and small borrower - $25+ million
5. Call Feature- The call feature utilized in all the scenarios is a 10 year optional call. This call feature is used to model all the scenarios for a consistent comparative analysis, even though most taxable debt issues employ a "make whole" call feature.
6. The "All Inclusive Cost" reflects the aggregate cost to the issuer inclusive of issuance costs.

**Observations of Analysis:**

Because APPA's membership has large and small borrowers, the analysis runs scenarios for both large and small borrowers. The smaller borrower does have a higher cost, reflective of the smaller market for their bonds. Many institutional buyers, particularly taxable institutional buyers, only participate in new issues of $100 million or more. The summary page reflects that the tax-exempt structure is the cheapest cost and the taxable scenario is the highest cost. The summary page also shows the more significant savings that the tax-exempt structure provides to small issuers.

The hardest scenario to model is scenario #4, where the interest exclusion is limited to a 28% cap. This proposed change to the current tax code could eliminate a large segment of the investor base for tax-exempt bonds, forcing rates to rise close to taxable rates on a relative basis. Because of this change, high net worth individuals/families, either as direct buyers of municipal bonds or via the ownership of tax-exempt mutual funds, would have a reduced incentive to buy municipal bonds and tax-exempt rates would have to increase to continue to induce investors to purchase these bonds. As seen in the chart on the next page, households and mutual funds own approximately 64% of outstanding municipal debt. Recent IRS data suggests that more than 40% of this sector are individuals and families with gross income in excess of $200,000 for individuals and $250,000 for families.

The dynamics of the market change daily, which could alter the results of this analysis with respect to the most attractive financing option and the spread relationships and differentials between each option.

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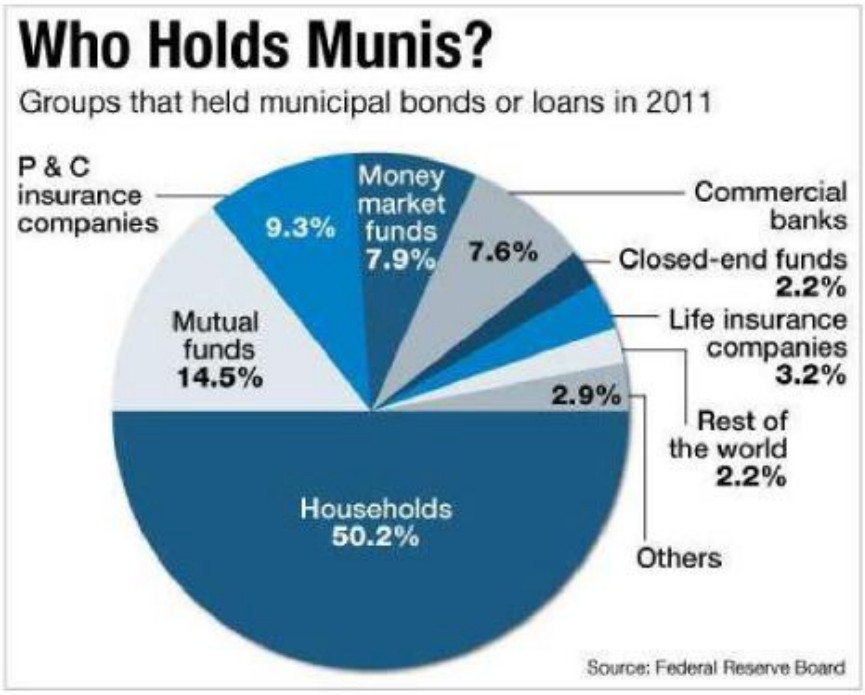
Who Holds Munis?
Groups that held municipal bonds or loans in 2011
P & C insurance companies
9.3%
Money market funds
7.9%
7.6%
Commercial banks
Closed-end funds
2.2%
Life insurance companies
3.2%
Mutual funds
14.5%
2.9%
Rest of the world
2.2%
Households
50.2%
Others
Source: Federal Reserve Board

## APPENDIX B



APPA American Public Power Association

Summary of Bond Financing Models
Assumes "A" Credit Rating Rates
As of October 22, 2012

**Large Borrower: Bond Financing for a $250,000,000 Project**

| Description | Scenario #1<br>Tax-Exempt Bond Issue | Scenario #2<br>Taxable Bond Issue | Scenario #3<br>Taxable Direct Pay Bond Issue 25% Subsidy | Scenario #4<br>Tax-Exempt Bond Issue - Exclusion Limited to 28% Bracket |
|---|---|---|---|---|
| All Inclusive Cost | 3.186% | 4.686% | 3.691% | 3.951% |
| Par Amount | $252,655,000 | $253,040,000 | $253,040,000 | $253,040,000 |
| Net Interest over Term | 140,305,604 | 219,384,309 | 165,873,675 | 179,530,279 |
| Total Debt Service | $392,960,604 | $472,424,309 | $418,913,675 | $432,570,279 |
| Estimated Annual Debt Service | $13,100,000 | $15,750,000 | $13,960,000 | $14,420,000 |
| Underwriter Discount (per $1,000) | $4.50 | $6.00 | $6.00 | $6.00 |
| Issuance Costs (per $1,000) | $6.00 | $6.00 | $6.00 | $6.00 |

**Small Borrower: Bond Financing for a $25,000,000 Project**

| Description | Scenario #1<br>Tax-Exempt Bond Issue | Scenario #2<br>Taxable Bond Issue | Scenario #3<br>Taxable Direct Pay Bond Issue 25% Subsidy | Scenario #4<br>Tax-Exempt Bond Issue - Exclusion Limited to 28% Bracket |
|---|---|---|---|---|
| All Inclusive Cost | 3.388% | 5.048% | 3.969% | 4.306% |
| Par Amount | $25,420,000 | $25,460,000 | $25,460,000 | $25,460,000 |
| Net Interest over Term | 14,906,248 | 23,805,362 | 17,892,571 | 19,709,482 |
| Total Debt Service | $40,326,248 | $49,265,362 | $43,352,571 | $45,169,482 |
| Estimated Annual Debt Service | $1,344,000 | $1,642,000 | $1,445,000 | $1,506,000 |
| Underwriter Discount (per $1,000) | $6.50 | $8.00 | $8.00 | $8.00 |
| Issuance Costs (per $1,000) | $10.00 | $10.00 | $10.00 | $10.00 |

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Large Borrower

$250 Million Project

**APPENDIX B**



## Scenario #1 - Large Borrower

**$250 Million Project Financed with Tax-Exempt Bond Issue**

Assumes "A" Credit Rating, $4.50/$1,000 Underwriter Discount, $6/$1,000 Issue Costs
Dated November 1, 2012 - Rates as of 10/22/2012

### Debt Service Schedule

| Date | Principal | Coupon * | Interest | Total P+I |
|---|---|---|---|---|
| 12/01/2012 | - | - | - | - |
| 12/01/2013 | 5,625,000.00 | 0.390% | 7,474,358.67 | 13,099,358.67 |
| 12/01/2014 | 6,220,000.00 | 0.560% | 6,877,470.50 | 13,097,470.50 |
| 12/01/2015 | 6,255,000.00 | 0.700% | 6,842,638.50 | 13,097,638.50 |
| 12/01/2016 | 6,300,000.00 | 0.910% | 6,798,853.50 | 13,098,853.50 |
| 12/01/2017 | 6,355,000.00 | 1.100% | 6,741,523.50 | 13,096,523.50 |
| 12/01/2018 | 6,425,000.00 | 1.310% | 6,671,618.50 | 13,096,618.50 |
| 12/01/2019 | 6,510,000.00 | 1.570% | 6,587,451.00 | 13,097,451.00 |
| 12/01/2020 | 6,615,000.00 | 1.890% | 6,485,244.00 | 13,100,244.00 |
| 12/01/2021 | 6,740,000.00 | 2.140% | 6,360,220.50 | 13,100,220.50 |
| 12/01/2022 | 6,880,000.00 | 2.350% | 6,215,984.50 | 13,095,984.50 |
| 12/01/2023 | 7,045,000.00 | 2.510% | 6,054,304.50 | 13,099,304.50 |
| 12/01/2024 | 7,220,000.00 | 2.590% | 5,877,475.00 | 13,097,475.00 |
| 12/01/2025 | 7,410,000.00 | 2.670% | 5,690,477.00 | 13,100,477.00 |
| 12/01/2026 | 7,605,000.00 | 2.740% | 5,492,630.00 | 13,097,630.00 |
| 12/01/2027 | 7,815,000.00 | 2.800% | 5,284,253.00 | 13,099,253.00 |
| 12/01/2028 | 8,035,000.00 | 2.860% | 5,065,433.00 | 13,100,433.00 |
| 12/01/2029 | 8,265,000.00 | 2.920% | 4,835,632.00 | 13,100,632.00 |
| 12/01/2030 | 8,505,000.00 | 2.980% | 4,594,294.00 | 13,099,294.00 |
| 12/01/2031 | 8,760,000.00 | 3.040% | 4,340,845.00 | 13,100,845.00 |
| 12/01/2032 | 9,025,000.00 | 3.100% | 4,074,541.00 | 13,099,541.00 |
| 12/01/2033 | 9,305,000.00 | 3.480% | 3,794,766.00 | 13,099,766.00 |
| 12/01/2034 | 9,625,000.00 | 3.480% | 3,470,952.00 | 13,095,952.00 |
| 12/01/2035 | 9,960,000.00 | 3.480% | 3,136,002.00 | 13,096,002.00 |
| 12/01/2036 | 10,310,000.00 | 3.480% | 2,789,394.00 | 13,099,394.00 |
| 12/01/2037 | 10,670,000.00 | 3.480% | 2,430,606.00 | 13,100,606.00 |
| 12/01/2038 | 11,040,000.00 | 3.480% | 2,059,290.00 | 13,099,290.00 |
| 12/01/2039 | 11,425,000.00 | 3.480% | 1,675,098.00 | 13,100,098.00 |
| 12/01/2040 | 11,820,000.00 | 3.480% | 1,277,508.00 | 13,097,508.00 |
| 12/01/2041 | 12,230,000.00 | 3.480% | 866,172.00 | 13,096,172.00 |
| 12/01/2042 | 12,660,000.00 | 3.480% | 440,568.00 | 13,100,568.00 |
| **Total** | **$252,655,000.00** | - | **$140,305,603.67** | **$392,960,603.67** |

**Yield Statistics**

| | |
|---|---|
| Bond Year Dollars | $4,445,984.58 |
| Average Coupon | 3.1557825% |
| Net Interest Cost (NIC) | 3.1813550% |
| True Interest Cost (TIC) | 3.1391626% |
| All Inclusive Cost (AIC) | 3.1858383% |

**IRS Form 8038**

| | |
|---|---|
| Bond Yield for Arbitrage Purposes | 3.1044236% |
| Weighted Average Maturity | 17.597 Years |
| First Coupon Date | 6/01/2013 |

* Source: Thomson Reuters

**APPENDIX B**



## Scenario #2 - Large Borrower

### $250 Million Project Financed with Taxable Bond Issue

Assumes "A" Credit Rating, $6/$1,000 Underwriter Discount, $6/$1,000 Issue Costs
Dated November 1,2012-Rates as of 10/22/2012

### Debt Service Schedule

| Date | Principal | Coupon | Interest | Total P+I |
|---|---|---|---|---|
| 12/01/2012 | - | - | - | - |
| 12/01/2013 | 4,285,000.00 | 0.630% | 11,464,366.33 | 15,749,366.33 |
| 12/01/2014 | 5,190,000.00 | 0.760% | 10,555,496.50 | 15,745,496.50 |
| 12/01/2015 | 5,230,000.00 | 1.020% | 10,516,052.50 | 15,746,052.50 |
| 12/01/2016 | 5,285,000.00 | 1.370% | 10,462,706.50 | 15,747,706.50 |
| 12/01/2017 | 5,355,000.00 | 1.780% | 10,390,302.00 | 15,745,302.00 |
| 12/01/2018 | 5,465,000.00 | 2.130% | 10,284,983.00 | 15,749,983.00 |
| 12/01/2019 | 5,570,000.00 | 2.480% | 10,178,791.50 | 15,748,791.50 |
| 12/01/2020 | 5,705,000.00 | 2.780% | 10,040,655.50 | 15,745,655.50 |
| 12/01/2021 | 5,865,000.00 | 3.130% | 9,882,056.50 | 15,747,056.50 |
| 12/01/2022 | 6,050,000.00 | 3.810% | 9,698,482.00 | 15,748,482.00 |
| 12/01/2023 | 6,280,000.00 | 4.000% | 9,467,977.00 | 15,747,977.00 |
| 12/01/2024 | 6,530,000.00 | 4.180% | 9,216,777.00 | 15,746,777.00 |
| 12/01/2025 | 6,805,000.00 | 4.330% | 8,943,823.00 | 15,748,823.00 |
| 12/01/2026 | 7,100,000.00 | 4.430% | 8,649,166.50 | 15,749,166.50 |
| 12/01/2027 | 7,415,000.00 | 4.580% | 8,334,636.50 | 15,749,636.50 |
| 12/01/2028 | 7,750,000.00 | 4.710% | 7,995,029.50 | 15,745,029.50 |
| 12/01/2029 | 8,115,000.00 | 4.750% | 7,630,004.50 | 15,745,004.50 |
| 12/01/2030 | 8,505,000.00 | 4.760% | 7,244,542.00 | 15,749,542.00 |
| 12/01/2031 | 8,910,000.00 | 4.770% | 6,839,704.00 | 15,749,704.00 |
| 12/01/2032 | 9,335,000.00 | 4.780% | 6,414,697.00 | 15,749,697.00 |
| 12/01/2033 | 9,780,000.00 | 4.880% | 5,968,484.00 | 15,748,484.00 |
| 12/01/2034 | 10,255,000.00 | 4.880% | 5,491,220.00 | 15,746,220.00 |
| 12/01/2035 | 10,755,000.00 | 4.880% | 4,990,776.00 | 15,745,776.00 |
| 12/01/2036 | 11,280,000.00 | 4.880% | 4,465,932.00 | 15,745,932.00 |
| 12/01/2037 | 11,830,000.00 | 4.880% | 3,915,468.00 | 15,745,468.00 |
| 12/01/2038 | 12,410,000.00 | 4.880% | 3,338,164.00 | 15,748,164.00 |
| 12/01/2039 | 13,015,000.00 | 4.880% | 2,732,556.00 | 15,747,556.00 |
| 12/01/2040 | 13,650,000.00 | 4.880% | 2,097,424.00 | 15,747,424.00 |
| 12/01/2041 | 14,315,000.00 | 4.880% | 1,431,304.00 | 15,746,304.00 |
| 12/01/2042 | 15,015,000.00 | 4.880% | 732,732.00 | 15,747,732.00 |
| Total | $253,040,000.00 | - | $219,384,309.33 | $472,424,309.33 |

| Yield Statistics | |
|---|---|
| Bond Year Dollars | $4,714,241.67 |
| Average Coupon | 4.8536500% |
| Net Interest Cost (NIC) | 4.8858554% |
| True Interest Cost (TIC) | 4.8345916% |
| All Inclusive Cost (AIC) | 4.8858604% |

| IRS Form 8038 | |
|---|---|
| Bond Yield for Arbitrage Purposes | 4.5837888% |
| Weighted Average Maturity | 18.630 Years |
| First Coupon Date | 6/01/2013 |

# APPENDIX B



## Scenario #3 - Large Borrower

$250 Million Project Financed with Taxable Direct Pay 25% Subsidy Bond Issue

Assumes "A" Credit Rating, $6/$1,000 Underwriter Discount, $6/$1,000 Issue Costs

Dated November 1, 2012 - Rates as of 10/22/2012

### Net Debt Service Schedule

| Date | Principal | Coupon | Interest | 25% Interest Subsidy | Interest After Subsidy | Net Debt Service |
|---|---|---|---|---|---|---|
| 12/01/2012 | - | - | - | - | - | - |
| 12/01/2013 | 5,075,000.00 | 0.830% | 11,849,962.04 | (2,962,490.51) | 8,887,471.53 | 13,962,471.53 |
| 12/01/2014 | 5,790,000.00 | 0.960% | 10,896,304.00 | (2,724,076.00) | 8,172,228.00 | 13,962,228.00 |
| 12/01/2015 | 5,835,000.00 | 1.220% | 10,840,720.00 | (2,710,180.00) | 8,130,540.00 | 13,965,540.00 |
| 12/01/2016 | 5,885,000.00 | 1.570% | 10,769,533.00 | (2,692,383.26) | 8,077,149.74 | 13,962,149.74 |
| 12/01/2017 | 5,955,000.00 | 1.980% | 10,677,138.50 | (2,669,284.62) | 8,007,853.88 | 13,962,853.88 |
| 12/01/2018 | 6,045,000.00 | 2.330% | 10,559,229.50 | (2,639,807.38) | 7,919,422.12 | 13,964,422.12 |
| 12/01/2019 | 6,150,000.00 | 2.680% | 10,418,381.00 | (2,604,595.26) | 7,813,785.74 | 13,963,785.74 |
| 12/01/2020 | 6,275,000.00 | 2.980% | 10,253,561.00 | (2,563,390.26) | 7,690,170.74 | 13,965,170.74 |
| 12/01/2021 | 6,415,000.00 | 3.330% | 10,066,566.00 | (2,516,641.50) | 7,549,924.50 | 13,964,924.50 |
| 12/01/2022 | 6,575,000.00 | 3.710% | 9,852,946.50 | (2,463,236.62) | 7,389,709.88 | 13,964,709.88 |
| 12/01/2023 | 6,755,000.00 | 3.930% | 9,609,014.00 | (2,402,253.50) | 7,206,760.50 | 13,961,760.50 |
| 12/01/2024 | 6,955,000.00 | 4.380% | 9,343,542.50 | (2,335,885.62) | 7,007,656.88 | 13,962,656.88 |
| 12/01/2025 | 7,185,000.00 | 4.530% | 9,038,913.50 | (2,259,728.38) | 6,779,185.12 | 13,964,185.12 |
| 12/01/2026 | 7,430,000.00 | 4.630% | 8,713,433.00 | (2,178,358.26) | 6,535,074.74 | 13,965,074.74 |
| 12/01/2027 | 7,685,000.00 | 4.780% | 8,369,424.00 | (2,092,356.00) | 6,277,068.00 | 13,962,068.00 |
| 12/01/2028 | 7,960,000.00 | 4.960% | 8,002,081.00 | (2,000,520.26) | 6,001,560.74 | 13,961,560.74 |
| 12/01/2029 | 8,260,000.00 | 5.000% | 7,607,265.00 | (1,901,816.26) | 5,705,448.74 | 13,965,448.74 |
| 12/01/2030 | 8,570,000.00 | 5.010% | 7,194,265.00 | (1,798,566.26) | 5,395,698.74 | 13,965,698.74 |
| 12/01/2031 | 8,890,000.00 | 5.020% | 6,764,908.00 | (1,691,227.00) | 5,073,681.00 | 13,963,681.00 |
| 12/01/2032 | 9,225,000.00 | 5.030% | 6,318,630.00 | (1,579,657.50) | 4,738,972.50 | 13,963,972.50 |
| 12/01/2033 | 9,575,000.00 | 5.130% | 5,854,612.50 | (1,463,653.12) | 4,390,959.38 | 13,965,959.38 |
| 12/01/2034 | 9,940,000.00 | 5.130% | 5,363,415.00 | (1,340,853.76) | 4,022,561.24 | 13,962,561.24 |
| 12/01/2035 | 10,325,000.00 | 5.130% | 4,853,493.00 | (1,213,373.26) | 3,640,119.74 | 13,965,119.74 |
| 12/01/2036 | 10,720,000.00 | 5.130% | 4,323,820.50 | (1,080,955.12) | 3,242,865.38 | 13,962,865.38 |
| 12/01/2037 | 11,135,000.00 | 5.130% | 3,773,884.50 | (943,471.12) | 2,830,413.38 | 13,965,413.38 |
| 12/01/2038 | 11,560,000.00 | 5.130% | 3,202,659.00 | (800,664.76) | 2,401,994.24 | 13,961,994.24 |
| 12/01/2039 | 12,005,000.00 | 5.130% | 2,609,631.00 | (652,407.76) | 1,957,223.24 | 13,962,223.24 |
| 12/01/2040 | 12,470,000.00 | 5.130% | 1,993,774.50 | (498,443.62) | 1,495,330.88 | 13,965,330.88 |
| 12/01/2041 | 12,950,000.00 | 5.130% | 1,354,063.50 | (338,515.88) | 1,015,547.62 | 13,965,547.62 |
| 12/01/2042 | 13,445,000.00 | 5.130% | 689,728.50 | (172,432.12) | 517,296.38 | 13,962,296.38 |
| **Total** | **$253,040,000.00** | - | **$221,164,899.54** | **(55,291,224.97)** | **$165,873,674.57** | **$418,913,674.57** |

| Yield Statistics | |
|---|---|
| Bond Year Dollars | $4,553,121.67 |
| Average Life | 17.994 Years |
| Average Coupon | 4.8574344% |
| Net Interest Cost (NIC) | 4.8907795% |
| True Interest Cost (TIC) | 3.6427510% |
| All Inclusive Cost (AIC) | 3.6909646% |

| IRS Form 8038 | |
|---|---|
| Bond Yield for Arbitrage Purposes | 3.5949645% |
| Weighted Average Maturity | 17.994 Years |
| First Coupon Date | 6/01/2013 |

**APPENDIX B**



## Scenario #4 - Large Borrower

$250 Million Project Financed with Tax-Exempt Bond Issue - Exclusion Limited to 28% Bracket

Assumes "A" Credit Rating, $6/$1,000 Underwriter Discount, $6/$1,000 Issue Costs
Dated November 1, 2012 - Rates as of 10/22/2012

### Debt Service Schedule

| Date | Principal | Coupon | Interest | Total P+I |
|---|---|---|---|---|
| 12/01/2012 | - | - | - | - |
| 12/01/2013 | 4,825,000.00 | 0.600% | 9,596,228.42 | 14,421,228.42 |
| 12/01/2014 | 5,590,000.00 | 0.720% | 8,829,107.00 | 14,419,107.00 |
| 12/01/2015 | 5,630,000.00 | 0.970% | 8,788,859.00 | 14,418,859.00 |
| 12/01/2016 | 5,685,000.00 | 1.300% | 8,734,248.00 | 14,419,248.00 |
| 12/01/2017 | 5,760,000.00 | 1.690% | 8,660,343.00 | 14,420,343.00 |
| 12/01/2018 | 5,855,000.00 | 1.950% | 8,562,999.00 | 14,417,999.00 |
| 12/01/2019 | 5,970,000.00 | 2.280% | 8,448,826.50 | 14,418,826.50 |
| 12/01/2020 | 6,105,000.00 | 2.560% | 8,312,710.50 | 14,417,710.50 |
| 12/01/2021 | 6,265,000.00 | 2.870% | 8,156,422.50 | 14,421,422.50 |
| 12/01/2022 | 6,440,000.00 | 3.140% | 7,976,617.00 | 14,416,617.00 |
| 12/01/2023 | 6,645,000.00 | 3.340% | 7,774,401.00 | 14,419,401.00 |
| 12/01/2024 | 6,865,000.00 | 3.480% | 7,552,458.00 | 14,417,458.00 |
| 12/01/2025 | 7,105,000.00 | 3.610% | 7,313,556.00 | 14,418,556.00 |
| 12/01/2026 | 7,360,000.00 | 3.710% | 7,057,065.50 | 14,417,065.50 |
| 12/01/2027 | 7,635,000.00 | 3.840% | 6,784,009.50 | 14,419,009.50 |
| 12/01/2028 | 7,930,000.00 | 3.960% | 6,490,825.50 | 14,420,825.50 |
| 12/01/2029 | 8,240,000.00 | 4.000% | 6,176,797.50 | 14,416,797.50 |
| 12/01/2030 | 8,570,000.00 | 4.010% | 5,847,197.50 | 14,417,197.50 |
| 12/01/2031 | 8,915,000.00 | 4.020% | 5,503,540.50 | 14,418,540.50 |
| 12/01/2032 | 9,275,000.00 | 4.030% | 5,145,157.50 | 14,420,157.50 |
| 12/01/2033 | 9,650,000.00 | 4.100% | 4,771,375.00 | 14,421,375.00 |
| 12/01/2034 | 10,045,000.00 | 4.100% | 4,375,725.00 | 14,420,725.00 |
| 12/01/2035 | 10,455,000.00 | 4.100% | 3,963,880.00 | 14,418,880.00 |
| 12/01/2036 | 10,885,000.00 | 4.100% | 3,535,225.00 | 14,420,225.00 |
| 12/01/2037 | 11,330,000.00 | 4.100% | 3,088,940.00 | 14,418,940.00 |
| 12/01/2038 | 11,795,000.00 | 4.100% | 2,624,410.00 | 14,419,410.00 |
| 12/01/2039 | 12,280,000.00 | 4.100% | 2,140,815.00 | 14,420,815.00 |
| 12/01/2040 | 12,780,000.00 | 4.100% | 1,637,335.00 | 14,417,335.00 |
| 12/01/2041 | 13,305,000.00 | 4.100% | 1,113,355.00 | 14,418,355.00 |
| 12/01/2042 | 13,850,000.00 | 4.100% | 567,850.00 | 14,417,850.00 |
| **Total** | **$253,040,000.00** | - | **$179,530,279.42** | **$432,570,279.42** |

| Yield Statistics | |
|---|---|
| Bond Year Dollars | $4,599,586.67 |
| Average Coupon | 3.9031629% |
| Net Interest Cost (NIC) | 3.9361911% |
| True Interest Cost (TIC) | 3.9015427% |
| All Inclusive Cost (AIC) | 3.9505333% |

| IRS Form 8038 | |
|---|---|
| Bond Yield for Arbitrage Purposes | 3.8529890% |
| Weighted Average Maturity | 18.177 Years |

First Coupon Date 6/01/2013

**APPENDIX B**



## Small Borrower

## $25 Million Project

**APPENDIX B**



## Scenario #1 - Small Borrower

$25 Million Project Financed with Tax-Exempt Bond Issue

Assumes "A" Credit Rating, $6.50/$1,000 Underwriter Discount, $10/$1,000 Issue Costs

Dated November 1, 2012

### Debt Service Schedule

| Date | Principal | Coupon | Interest | Total P+I |
|---|---|---|---|---|
| 12/01/2012 | - | - | - | - |
| 12/01/2013 | 550,000.00 | 0.540% | 796,481.29 | 1,346,481.29 |
| 12/01/2014 | 610,000.00 | 0.710% | 732,243.50 | 1,342,243.50 |
| 12/01/2015 | 615,000.00 | 0.850% | 727,912.50 | 1,342,912.50 |
| 12/01/2016 | 620,000.00 | 1.060% | 722,685.00 | 1,342,685.00 |
| 12/01/2017 | 630,000.00 | 1.250% | 716,113.00 | 1,346,113.00 |
| 12/01/2018 | 635,000.00 | 1.460% | 708,238.00 | 1,343,238.00 |
| 12/01/2019 | 645,000.00 | 1.720% | 698,967.00 | 1,343,967.00 |
| 12/01/2020 | 655,000.00 | 2.040% | 687,873.00 | 1,342,873.00 |
| 12/01/2021 | 670,000.00 | 2.290% | 674,511.00 | 1,344,511.00 |
| 12/01/2022 | 685,000.00 | 2.500% | 659,168.00 | 1,344,168.00 |
| 12/01/2023 | 705,000.00 | 2.660% | 642,043.00 | 1,347,043.00 |
| 12/01/2024 | 720,000.00 | 2.740% | 623,290.00 | 1,343,290.00 |
| 12/01/2025 | 740,000.00 | 2.820% | 603,562.00 | 1,343,562.00 |
| 12/01/2026 | 760,000.00 | 2.890% | 582,694.00 | 1,342,694.00 |
| 12/01/2027 | 785,000.00 | 2.950% | 560,730.00 | 1,345,730.00 |
| 12/01/2028 | 805,000.00 | 3.010% | 537,572.50 | 1,342,572.50 |
| 12/01/2029 | 830,000.00 | 3.070% | 513,342.00 | 1,343,342.00 |
| 12/01/2030 | 855,000.00 | 3.130% | 487,861.00 | 1,342,861.00 |
| 12/01/2031 | 885,000.00 | 3.190% | 461,099.50 | 1,346,099.50 |
| 12/01/2032 | 910,000.00 | 3.250% | 432,868.00 | 1,342,868.00 |
| 12/01/2033 | 940,000.00 | 3.630% | 403,293.00 | 1,343,293.00 |
| 12/01/2034 | 975,000.00 | 3.630% | 369,171.00 | 1,344,171.00 |
| 12/01/2035 | 1,010,000.00 | 3.630% | 333,778.50 | 1,343,778.50 |
| 12/01/2036 | 1,050,000.00 | 3.630% | 297,115.50 | 1,347,115.50 |
| 12/01/2037 | 1,085,000.00 | 3.630% | 259,000.50 | 1,344,000.50 |
| 12/01/2038 | 1,125,000.00 | 3.630% | 219,615.00 | 1,344,615.00 |
| 12/01/2039 | 1,165,000.00 | 3.630% | 178,777.50 | 1,343,777.50 |
| 12/01/2040 | 1,210,000.00 | 3.630% | 136,488.00 | 1,346,488.00 |
| 12/01/2041 | 1,250,000.00 | 3.630% | 92,565.00 | 1,342,565.00 |
| 12/01/2042 | 1,300,000.00 | 3.630% | 47,190.00 | 1,347,190.00 |
| **Total** | **$25,420,000.00** | - | **$14,906,248.29** | **$40,326,248.29** |

| Yield Statistics | |
|---|---|
| Bond Year Dollars | $450,213.33 |
| Average Coupon | 3.3109300% |
| Net Interest Cost (NIC) | 3.3476304% |
| True Interest Cost (TIC) | 3.3085588% |
| All Inclusive Cost (AIC) | 3.3875451% |

| IRS Form 8038 | |
|---|---|
| Bond Yield for Arbitrage Purposes | 3.2578381% |
| Weighted Average Maturity | 17.711 Years |
| First Coupon Date | 6/01/2013 |

**APPENDIX B**



## Scenario #2 - Small Borrower

**$25 Million Project Financed with Taxable Bond Issue**

Assumes 'A' Credit Rating, $8/$1,000 Underwriter Discount, $10/$1,000 Issue Cost

Dated November 1, 2012 - Rates as of 10/22/2012

### Debt Service Schedule

| Date | Principal | Coupon | Interest | Total P+I |
|---|---|---|---|---|
| 12/01/2012 | - | - | - | - |
| 12/01/2013 | 400,000.00 | 0.930% | 1,243,751.71 | 1,643,751.71 |
| 12/01/2014 | 495,000.00 | 1.060% | 1,144,358.50 | 1,639,358.50 |
| 12/01/2015 | 505,000.00 | 1.320% | 1,139,111.50 | 1,644,111.50 |
| 12/01/2016 | 510,000.00 | 1.670% | 1,132,445.50 | 1,642,445.50 |
| 12/01/2017 | 520,000.00 | 2.080% | 1,123,928.50 | 1,643,928.50 |
| 12/01/2018 | 530,000.00 | 2.430% | 1,113,112.50 | 1,643,112.50 |
| 12/01/2019 | 540,000.00 | 2.780% | 1,100,233.50 | 1,640,233.50 |
| 12/01/2020 | 555,000.00 | 3.080% | 1,085,221.50 | 1,640,221.50 |
| 12/01/2021 | 575,000.00 | 3.430% | 1,068,127.50 | 1,643,127.50 |
| 12/01/2022 | 595,000.00 | 4.110% | 1,048,405.00 | 1,643,405.00 |
| 12/01/2023 | 620,000.00 | 4.330% | 1,023,950.50 | 1,643,950.50 |
| 12/01/2024 | 645,000.00 | 4.480% | 997,104.50 | 1,642,104.50 |
| 12/01/2025 | 675,000.00 | 4.630% | 968,208.50 | 1,643,208.50 |
| 12/01/2026 | 705,000.00 | 4.730% | 936,956.00 | 1,641,956.00 |
| 12/01/2027 | 740,000.00 | 4.880% | 903,609.50 | 1,643,609.50 |
| 12/01/2028 | 775,000.00 | 5.010% | 867,497.50 | 1,642,497.50 |
| 12/01/2029 | 815,000.00 | 5.050% | 828,670.00 | 1,643,670.00 |
| 12/01/2030 | 855,000.00 | 5.060% | 787,512.50 | 1,642,512.50 |
| 12/01/2031 | 895,000.00 | 5.070% | 744,249.50 | 1,639,249.50 |
| 12/01/2032 | 945,000.00 | 5.080% | 698,873.00 | 1,643,873.00 |
| 12/01/2033 | 990,000.00 | 5.180% | 650,867.00 | 1,640,867.00 |
| 12/01/2034 | 1,040,000.00 | 5.180% | 599,585.00 | 1,639,585.00 |
| 12/01/2035 | 1,095,000.00 | 5.180% | 545,713.00 | 1,640,713.00 |
| 12/01/2036 | 1,155,000.00 | 5.180% | 488,992.00 | 1,643,992.00 |
| 12/01/2037 | 1,215,000.00 | 5.180% | 429,163.00 | 1,644,163.00 |
| 12/01/2038 | 1,275,000.00 | 5.180% | 366,226.00 | 1,641,226.00 |
| 12/01/2039 | 1,340,000.00 | 5.180% | 300,181.00 | 1,640,181.00 |
| 12/01/2040 | 1,410,000.00 | 5.180% | 230,769.00 | 1,640,769.00 |
| 12/01/2041 | 1,485,000.00 | 5.180% | 157,731.00 | 1,642,731.00 |
| 12/01/2042 | 1,560,000.00 | 5.180% | 80,808.00 | 1,640,808.00 |
| Total | $25,480,000.00 | - | $23,805,362.21 | $49,265,362.21 |

**Yield Statistics**

| | |
|---|---|
| Bond Year Dollars | $479,671.67 |
| Average Coupon | 4.9628452% |
| Net Interest Cost (NIC) | 5.0053076% |
| True Interest Cost (TIC) | 4.9602461% |
| All Inclusive Cost (AIC) | 5.0479049% |

**IRS Form 8038**

| | |
|---|---|
| Bond Yield for Arbitrage Purposes | 4.8910836% |
| Weighted Average Maturity | 18.840 Years |
| First Coupon Date | 6/01/2013 |

# APPENDIX B



## Scenario #3 - Small Borrower

$25 Million Project Financed with Taxable Direct Pay 25% Subsidy Bond Issue

Assumes "A" Credit Rating, $8/$1,000 Underwriter Discount, $10/$1,000 Issue Cost

Dated November 1, 2012 - Rates as of 10/22/2012

### Net Debt Service Schedule

| Date | Principal | Coupon | Interest | 25% Interest Subsidy | Interest After Subsidy | Net Debt Service |
|---|---|---|---|---|---|---|
| 12/01/2012 | - | - | - | - | - | - |
| 12/01/2013 | 485,000.00 | 1.130% | 1,279,864.63 | (319,966.16) | 959,898.47 | 1,444,898.47 |
| 12/01/2014 | 565,000.00 | 1.260% | 1,175,933.00 | (293,983.26) | 881,949.74 | 1,446,949.74 |
| 12/01/2015 | 570,000.00 | 1.520% | 1,168,814.00 | (292,203.50) | 876,610.50 | 1,446,610.50 |
| 12/01/2016 | 575,000.00 | 1.870% | 1,160,150.00 | (290,037.50) | 870,112.50 | 1,445,112.50 |
| 12/01/2017 | 585,000.00 | 2.280% | 1,149,397.50 | (287,349.38) | 862,048.12 | 1,447,048.12 |
| 12/01/2018 | 595,000.00 | 2.630% | 1,136,059.50 | (284,014.88) | 852,044.62 | 1,447,044.62 |
| 12/01/2019 | 605,000.00 | 2.980% | 1,120,411.00 | (280,102.76) | 840,308.24 | 1,445,308.24 |
| 12/01/2020 | 620,000.00 | 3.280% | 1,102,382.00 | (275,595.50) | 826,786.50 | 1,446,786.50 |
| 12/01/2021 | 635,000.00 | 3.630% | 1,082,046.00 | (270,511.50) | 811,534.50 | 1,446,534.50 |
| 12/01/2022 | 650,000.00 | 4.010% | 1,058,995.50 | (264,748.88) | 794,246.62 | 1,444,246.62 |
| 12/01/2023 | 670,000.00 | 4.230% | 1,032,930.50 | (258,232.62) | 774,697.88 | 1,444,697.88 |
| 12/01/2024 | 690,000.00 | 4.680% | 1,004,589.50 | (251,147.38) | 753,442.12 | 1,443,442.12 |
| 12/01/2025 | 715,000.00 | 4.730% | 972,297.50 | (243,074.38) | 729,223.12 | 1,444,223.12 |
| 12/01/2026 | 740,000.00 | 4.930% | 936,478.00 | (234,619.50) | 703,858.50 | 1,443,858.50 |
| 12/01/2027 | 770,000.00 | 5.080% | 901,996.00 | (225,499.00) | 676,497.00 | 1,446,497.00 |
| 12/01/2028 | 795,000.00 | 5.260% | 862,880.00 | (215,720.00) | 647,160.00 | 1,442,160.00 |
| 12/01/2029 | 830,000.00 | 5.300% | 821,063.00 | (205,265.76) | 615,797.24 | 1,445,797.24 |
| 12/01/2030 | 860,000.00 | 5.310% | 777,073.00 | (194,268.26) | 582,804.74 | 1,442,804.74 |
| 12/01/2031 | 895,000.00 | 5.320% | 731,407.00 | (182,851.76) | 548,555.24 | 1,443,555.24 |
| 12/01/2032 | 930,000.00 | 5.330% | 683,793.00 | (170,948.26) | 512,844.74 | 1,442,844.74 |
| 12/01/2033 | 970,000.00 | 5.430% | 634,224.00 | (158,556.00) | 475,668.00 | 1,445,668.00 |
| 12/01/2034 | 1,010,000.00 | 5.430% | 581,553.00 | (145,388.26) | 436,164.74 | 1,446,164.74 |
| 12/01/2035 | 1,050,000.00 | 5.430% | 526,710.00 | (131,677.50) | 395,032.50 | 1,445,032.50 |
| 12/01/2036 | 1,095,000.00 | 5.430% | 469,695.00 | (117,423.76) | 352,271.24 | 1,447,271.24 |
| 12/01/2037 | 1,135,000.00 | 5.430% | 410,236.50 | (102,559.12) | 307,677.38 | 1,442,677.38 |
| 12/01/2038 | 1,185,000.00 | 5.430% | 348,606.00 | (87,151.50) | 261,454.50 | 1,446,454.50 |
| 12/01/2039 | 1,230,000.00 | 5.430% | 284,260.50 | (71,065.12) | 213,195.38 | 1,443,195.38 |
| 12/01/2040 | 1,280,000.00 | 5.430% | 217,471.50 | (54,367.88) | 163,103.62 | 1,443,103.62 |
| 12/01/2041 | 1,335,000.00 | 5.430% | 147,967.50 | (36,991.88) | 110,975.62 | 1,445,975.62 |
| 12/01/2042 | 1,390,000.00 | 5.430% | 75,477.00 | (18,869.26) | 56,607.74 | 1,446,607.74 |
| **Total** | **$25,460,000.00** | | **- $23,856,761.63** | **(5,964,190.52)** | **$17,892,571.11** | **$43,352,571.11** |

| Yield Statistics | |
|---|---|
| Bond Year Dollars | $462,091.67 |
| Average Life | 18.150 Years |
| Average Coupon | 5.1627769% |
| Net Interest Cost (NIC) | 5.2068547% |
| True Interest Cost (TIC) | 3.8866299% |
| All Inclusive Cost (AIC) | 3.9686347% |

| IRS Form 8038 | |
|---|---|
| Bond Yield for Arbitrage Purposes | 3.8219043% |
| Weighted Average Maturity | 18.150 Years |

First Coupon Date 6/01/2013

## Scenario #4 - Small Borrower

**$25 Million Project Financed with Tax-Exempt Bond Issue -**
**Exclusion Limited to 28% Bracket**

Assumes "A" Credit Rating, $8/$1,000 Underwriter Discount, $10/$1,000 Issue Cost
Dated November 1, 2012 - Rates as of 10/22/2012

### Debt Service Schedule

| Date | Principal | Coupon | Interest | Total P+I |
|---|---|---|---|---|
| 12/01/2012 | - | - | - | - |
| 12/01/2013 | 450,000.00 | 0.900% | 1,053,522.71 | 1,503,522.71 |
| 12/01/2014 | 535,000.00 | 1.020% | 968,432.50 | 1,503,432.50 |
| 12/01/2015 | 545,000.00 | 1.270% | 962,975.50 | 1,507,975.50 |
| 12/01/2016 | 550,000.00 | 1.600% | 956,054.00 | 1,506,054.00 |
| 12/01/2017 | 560,000.00 | 1.990% | 947,254.00 | 1,507,254.00 |
| 12/01/2018 | 570,000.00 | 2.250% | 936,110.00 | 1,506,110.00 |
| 12/01/2019 | 580,000.00 | 2.580% | 923,285.00 | 1,503,285.00 |
| 12/01/2020 | 595,000.00 | 2.860% | 908,321.00 | 1,503,321.00 |
| 12/01/2021 | 615,000.00 | 3.070% | 891,304.00 | 1,506,304.00 |
| 12/01/2022 | 635,000.00 | 3.440% | 872,423.50 | 1,507,423.50 |
| 12/01/2023 | 655,000.00 | 3.640% | 850,579.50 | 1,505,579.50 |
| 12/01/2024 | 680,000.00 | 3.780% | 826,737.50 | 1,506,737.50 |
| 12/01/2025 | 705,000.00 | 3.910% | 801,033.50 | 1,506,033.50 |
| 12/01/2026 | 730,000.00 | 4.010% | 773,468.00 | 1,503,468.00 |
| 12/01/2027 | 760,000.00 | 4.140% | 744,195.00 | 1,504,195.00 |
| 12/01/2028 | 795,000.00 | 4.240% | 712,731.00 | 1,507,731.00 |
| 12/01/2029 | 825,000.00 | 4.300% | 679,023.00 | 1,504,023.00 |
| 12/01/2030 | 860,000.00 | 4.310% | 643,548.00 | 1,503,548.00 |
| 12/01/2031 | 900,000.00 | 4.320% | 606,482.00 | 1,506,482.00 |
| 12/01/2032 | 940,000.00 | 4.330% | 567,602.00 | 1,507,602.00 |
| 12/01/2033 | 980,000.00 | 4.400% | 526,900.00 | 1,506,900.00 |
| 12/01/2034 | 1,020,000.00 | 4.400% | 483,780.00 | 1,503,780.00 |
| 12/01/2035 | 1,065,000.00 | 4.400% | 438,900.00 | 1,503,900.00 |
| 12/01/2036 | 1,115,000.00 | 4.400% | 392,040.00 | 1,507,040.00 |
| 12/01/2037 | 1,165,000.00 | 4.400% | 342,980.00 | 1,507,980.00 |
| 12/01/2038 | 1,215,000.00 | 4.400% | 291,720.00 | 1,506,720.00 |
| 12/01/2039 | 1,270,000.00 | 4.400% | 238,260.00 | 1,508,260.00 |
| 12/01/2040 | 1,325,000.00 | 4.400% | 182,380.00 | 1,507,380.00 |
| 12/01/2041 | 1,380,000.00 | 4.400% | 124,080.00 | 1,504,080.00 |
| 12/01/2042 | 1,440,000.00 | 4.400% | 63,360.00 | 1,503,360.00 |
| **Total** | **$25,480,000.00** | - | **$19,709,481.71** | **$45,189,481.71** |

**Yield Statistics**

| | |
|---|---|
| Bond Year Dollars | $468,276.67 |
| Average Coupon | 4.2089395% |
| Net Interest Cost (NIC) | 4.2524352% |
| True Interest Cost (TIC) | 4.2223326% |
| All Inclusive Cost (AIC) | 4.3060336% |

**IRS Form 8038**

| | |
|---|---|
| Bond Yield for Arbitrage Purposes | 4.1562757% |
| Weighted Average Maturity | 18.393 Years |

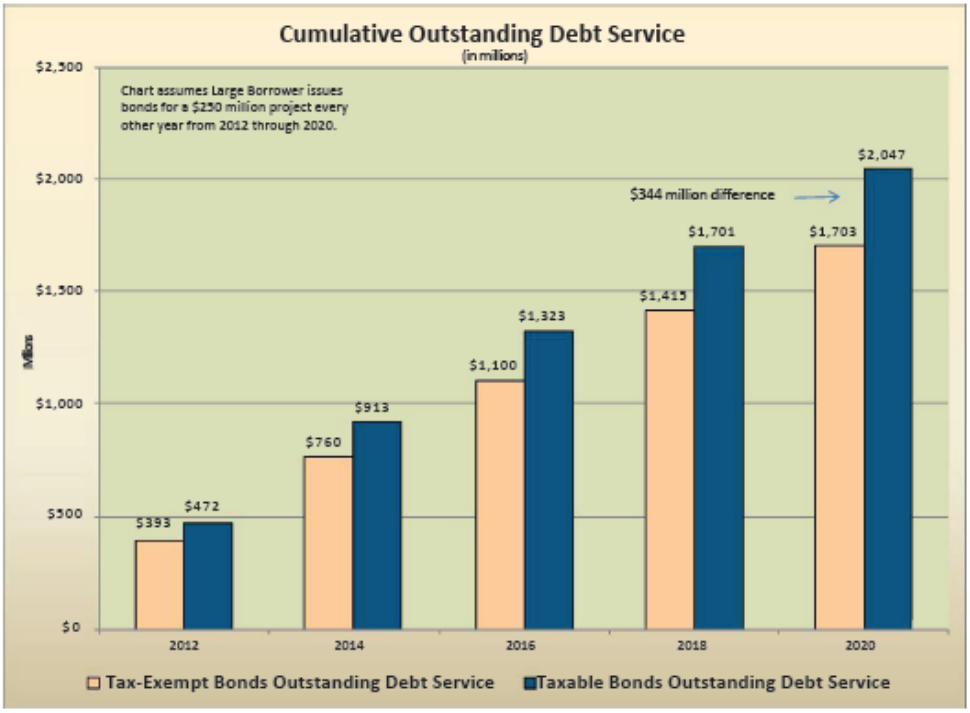
First Coupon Date 6/01/2013

**APPENDIX B**

BLX ADVISORS / ASSET MANAGEMENT / COMPLIANCE

## Appendix A

This graph illustrates the cumulative difference in the aggregate debt service between tax-exempt issues and taxable issues of five bond transactions, assuming uniform interest rates and bond structure, respectively.



**APPENDIX B**



# Appendix B

## Data Sources and Assumptions

**All rates as of October 22, 2012**

### Scenario 1

These interest rates are provided by Thomson Reuters-Municipal Market Data for a benchmark generic "A" rated municipal electric issuer.

### Scenario 2

These interest rates are provided by Thomson Reuters- Municipal Market Data for a benchmark generic "A" rated taxable municipal issuer. Yields on the maturities beyond 10 years were adjusted higher by 40 basis points to reflect a 10 year call option versus a "make whole" call option. Historically a 10 year call option on new issue taxable bonds can cost approximately 40 basis points, according to Thomson Reuters.

### Scenario 3

These interest rates were based on scenario 2 and adjusted higher to reflect the "Build America Bond" spreads to other "A" rated taxable municipal bonds and the Thomson Reuters-Municipal Market Data benchmark generic "A" rated taxable municipal scale (scenario 2) .[1] Relative trades and market evaluations were reviewed from EMMA and Interactive Data. Historically a 10 year call option on new issue taxable direct pay bonds can cost approximately 40 basis points, according to Thomson Reuters.

### Scenario 4

These interest rates were based on scenario 1 and derived from historical trading relationships that tax-exempt bonds have traded at approximately 90% of U.S. treasuries. Additional inputs are based on the computation of the 28% cap on individuals/families and the market interpretation of these estimated impacts on interest rates. This scenario could eliminate a significant incentive for as much as 40+% of the investor market (individuals/families earning more than $200k/$250k, respectively) to buy tax-exempt bonds and/or this group of investors, in the tax brackets above 28%, will demand higher yields to offset the additional tax cost. The negative impact on rates for borrowers could also be exacerbated by retroactive nature of the 28% cap proposal. Many present owners of municipal bonds, adversely impacted by the 28% cap, may become sellers of municipal bonds (either directly or via mutual funds), adding to the secondary market supply, placing pressure on rates and negatively impacting the new issue market. For the large borrower, the modeling reflects a negative impact of 77 basis points on the "all inclusive cost" over scenario #1, a traditional tax-exempt issue. Depending on market conditions, this negative impact of this scenario could range from 60 to 90 basis points. For the small borrower, the modeling reflects a negative impact of 92 basis points on the "all inclusive cost" over scenario #1, a traditional tax-exempt issue. Depending on market conditions, this negative impact of this scenario could range from 75 to 100 basis points.

[1] We note that the spreads between taxable municipal bonds and BABs were magnified in October, 2012. This was a result of concerns that sequestration would make many outstanding BABs callable at prices less than their then current value and investor concerns and uncertainty regarding the implications of a potential reduction to the federal subsidy.

**APPENDIX B**



**Large ($250 million) versus Small ($25 million) Issuers**

These issue sizes were chosen to better illustrate the impacts of tax reform proposals for a cross section of members of the APPA. The market does differentiate between large and small issues, particularly in the taxable market, where many large institutional investors such as pension funds, insurance companies and foreign institutions require large blocks of bonds for liquidity and performance. In all instances, smaller, less frequent issuers pay an interest rate premium, as the potential market for their bonds is smaller than larger more frequent issuers.

**APPENDIX B**

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